Advanced Technology Program

Prosperity Through Innovation

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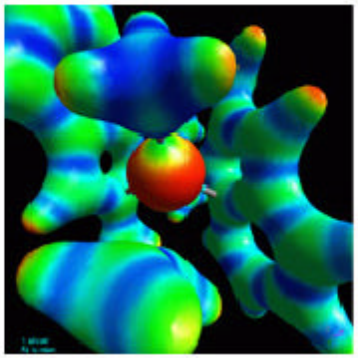
National Institute of Standards and Technology

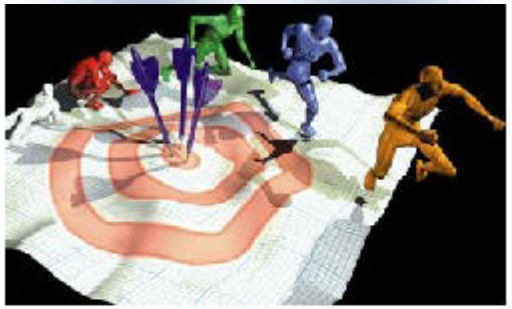
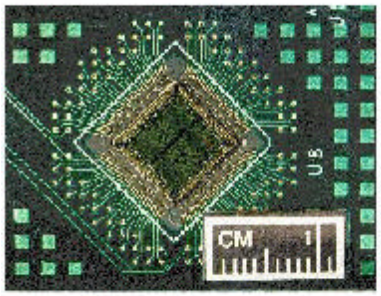
Technology Administration

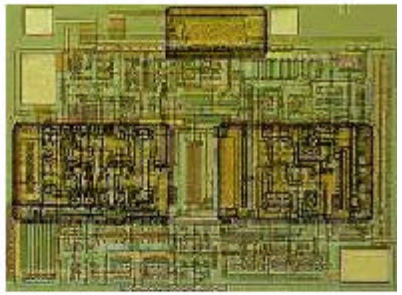
U.S. Department of Commerce

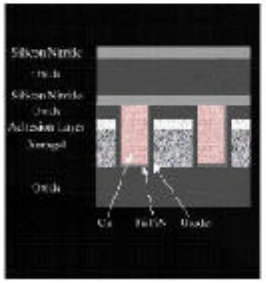
ADVANCED TECHNOLOGY PROGRAM







Bridging the Gap Between the Laboratory and the Marketplace

NIST **National Institute of Standards and Technology** • Technology Administration • U.S. Department of Commerce

ATP Stimulates Industry

To tackle the R&D challenges of the 21st Century

- ATP Mission:
  - ✓Accelerate the development of innovative technologies
  - ✓For broad national benefit
  - ✓Through partnerships with the private sector

What the ATP Offers

- Early financial support
  - ✓ Reduced risk for R&D investment
- Research support
  - ✓ Information on assembling a JV
  - ✓ Links to additional technical resources
- Recognition
  - ✓ Leverage for additional financing
  - ✓ External validation
- Independence
  - ✓ Companies retain their intellectual property rights

The Difference ATP Makes

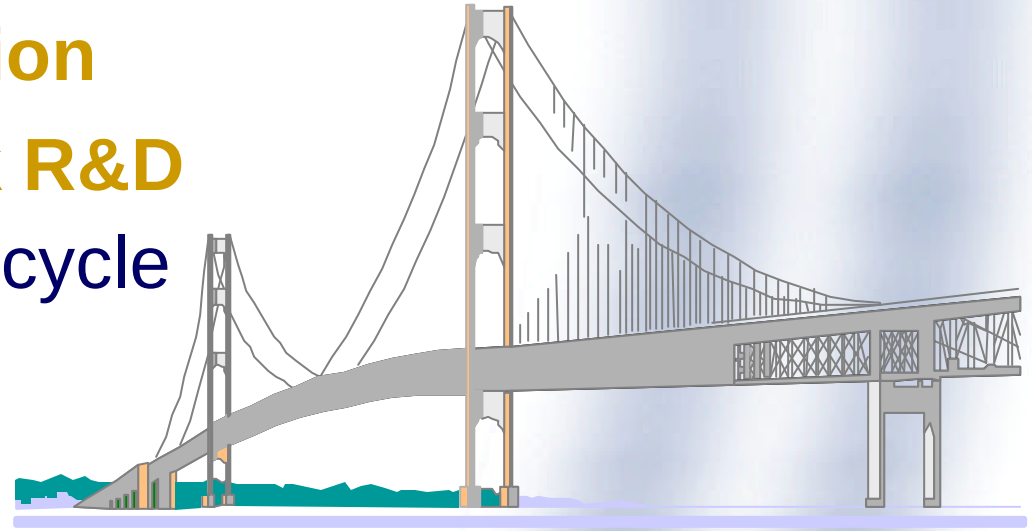
With the ATP, R&D is:

- Higher risk
- Creating leap-frog technologies
- Leading to multiple applications
- Expanding company & national competencies
- Broadly diffused

ATP

Early Program Impacts

- Developing **Leap-frog Technologies**
  - ✓ 37% of applications represent “new-to-the-world” solutions
- Leading to **Multiple Applications**
  - ✓ 4.5 applications per project
- Resulting in 100 **Commercialized Technologies**
- Stimulating **Collaboration**
- Accelerating **High Risk R&D**
  - ✓ 86% ahead in R&D cycle



More Program Impacts

- Highlights from first 38 ATP projects completed:
  - ✓66% would not have proceeded at all without ATP support
  - ✓7 award winners
  - ✓24 projects with a new process, product or service in the marketplace
  - ✓60% of small, single-applicant companies more than doubled in size

ATP is part of NIST

NIST Mission:

Strengthen the U.S. economy and improve the quality of life by working with industry to develop and apply technology, measurements, and standards.

Helping America Measure Up

- 3,300 employees
- $800 million annual budget
- 1,200 industrial partners
- 2,000 field agents
- 1,550 guest researchers
- $1.5 billion co-funding of industry R&D
- National measurement standards

The Competitive Environment

- Advances in technology account for more than ***50 % of U.S. economic growth***
- Global competition has forced a focus on ***short-term return*** on investment
- Now more than ever, our nation's economic well being depends on ***rapid development and commercialization*** of technology

A Decade of Innovation

- The Program is celebrating its 10th Year
- 468 projects awarded with 1,067 participants and 1,027 subcontractors (157 Joint Ventures)
- $3 billion of advanced technology development funded
  - ✓ ATP Share = $1.496 billion
  - ✓ Industry Share = $1.499 billion
- Small businesses are thriving
  - ✓ > 50% of projects led by small businesses
- More than 145 Universities participate
- Nearly 20 national laboratories participate

ADVANCED TECHNOLOGY PROGRAM

Investments in Innovative Technologies

Electronics and Photonics ($329 M)

- Microelectronics
- Optoelectronics
- Optics Technologies
- Power Technologies
- Wireless Electronics
- Organic Electronics

Biotechnology ($254M)

- DNA Technologies
- Tissue Engineering
- Drug Discovery Methods
- Proteomics
- Medical Devices & Imaging
- Microfluidics

Manufacturing ($180 M)

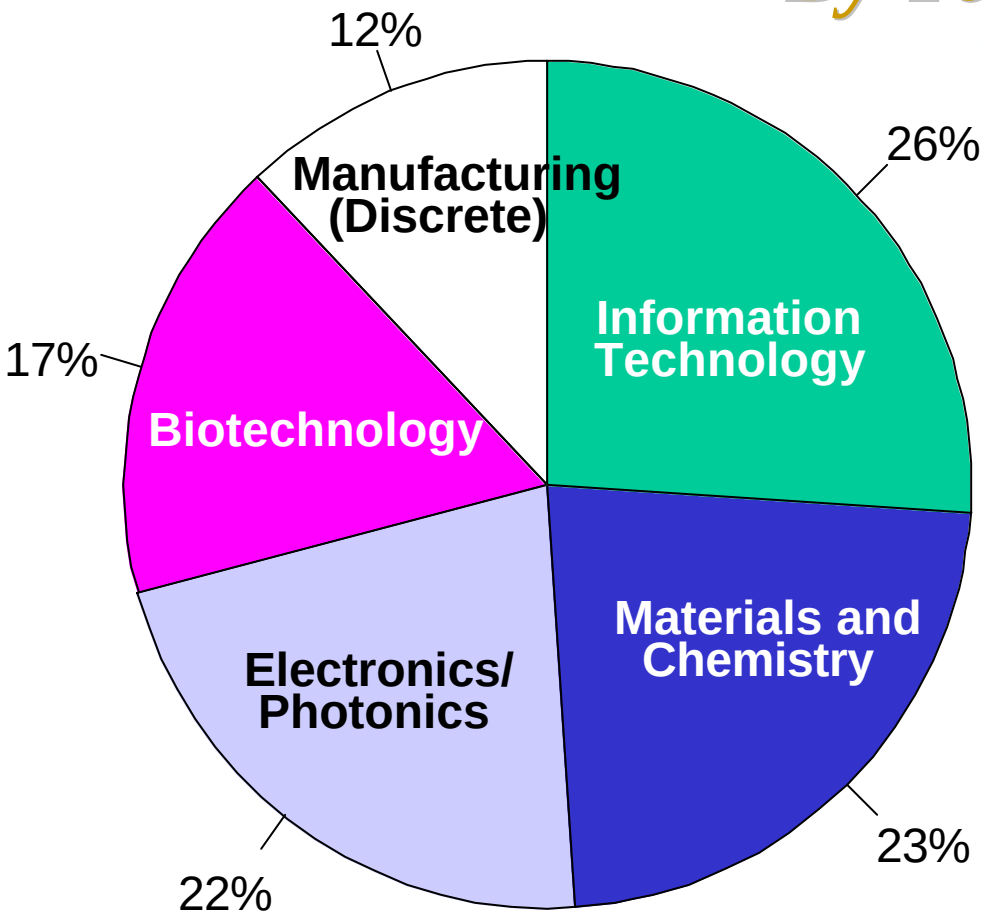
Information Technology ($389 M)

- Advanced Learning Systems
- Component-Based Software
- Digital Video
- Information Infrastructure for Healthcare
- Electronic Commerce
- Dependable Computing Systems
- Technologies for the Integration of Manufacturing Applications

Chemistry and Materials ($344 M)

- Chemical Processing
- Sensors
- Metabolic Engineering/Catalysis
- Combinatorial Methods
- Separations/Membranes
- Materials Processing
- Advanced Materials
- Nanotechnology
- Material Interfaces

468 ATP Awards
By Technology Area



Forty Competitions (1990-1999)

(As a percent of $1,496 M)

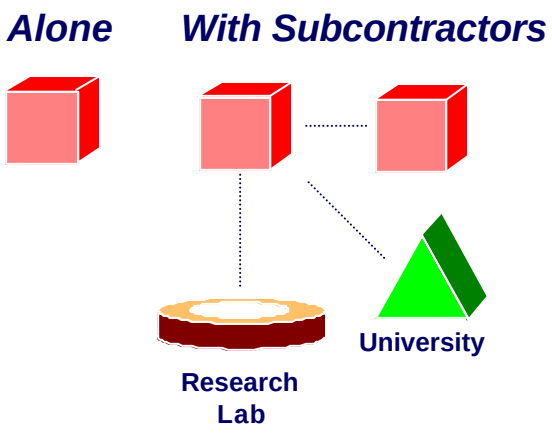
ATP Criteria

Critical Elements of a Proposal ...

- **Scientific and Technological Merit (50%)**
  - ✓ Innovations in the Technology
  - ✓ High Technical Risk & Feasibility
  - ✓ Quality of R&D Plan
- **Broad-Based Economic Benefits (50%)**
  - ✓ Economic Benefits
  - ✓ Need for ATP Funding
  - ✓ Pathway to Economic Benefits

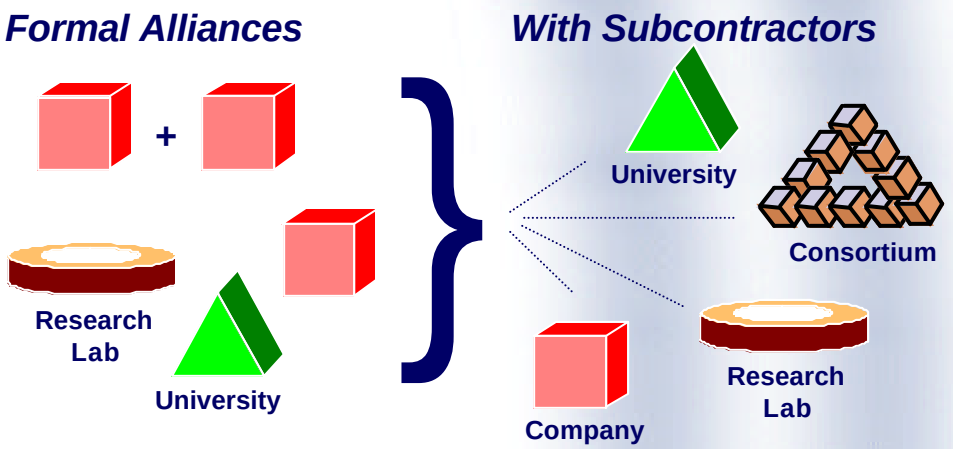
ATP Eligibility

SINGLE COMPANIES



- For-profit company
- 3-year time limit
- $2M award cap
- Company pays indirect costs
- Large companies cost share >60% of project cost

JOINT VENTURES



- At least 2 for-profit companies
- 5-year time limit
- No limit on award amount
- Industry share >50% total cost

- Intellectual property is owned by the for-profit companies
- ATP encourages teaming arrangements - most projects involve alliances

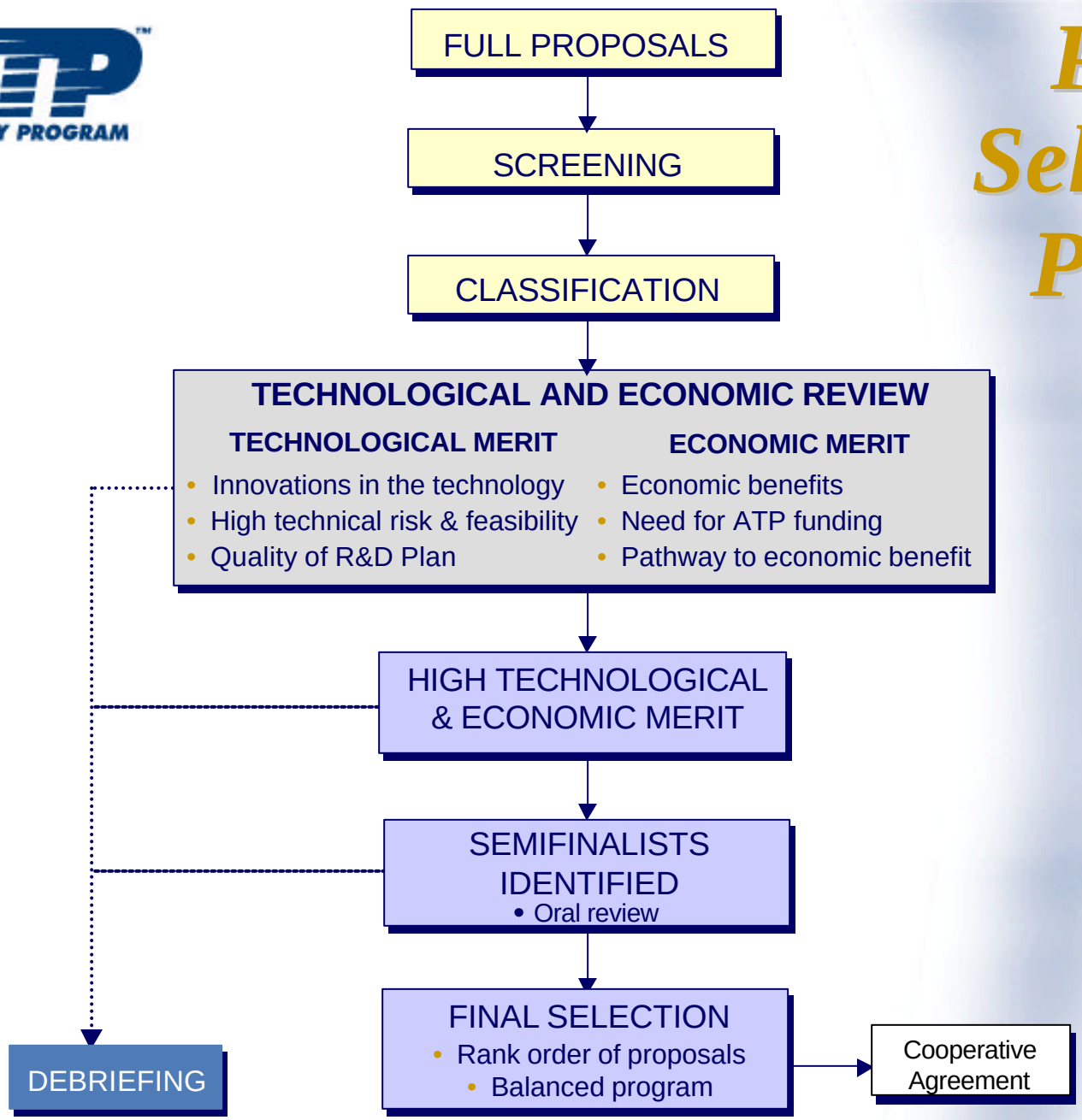
ADVANCED TECHNOLOGY PROGRAM

Proposal Evaluation

Scientific & Engineering Peer Review

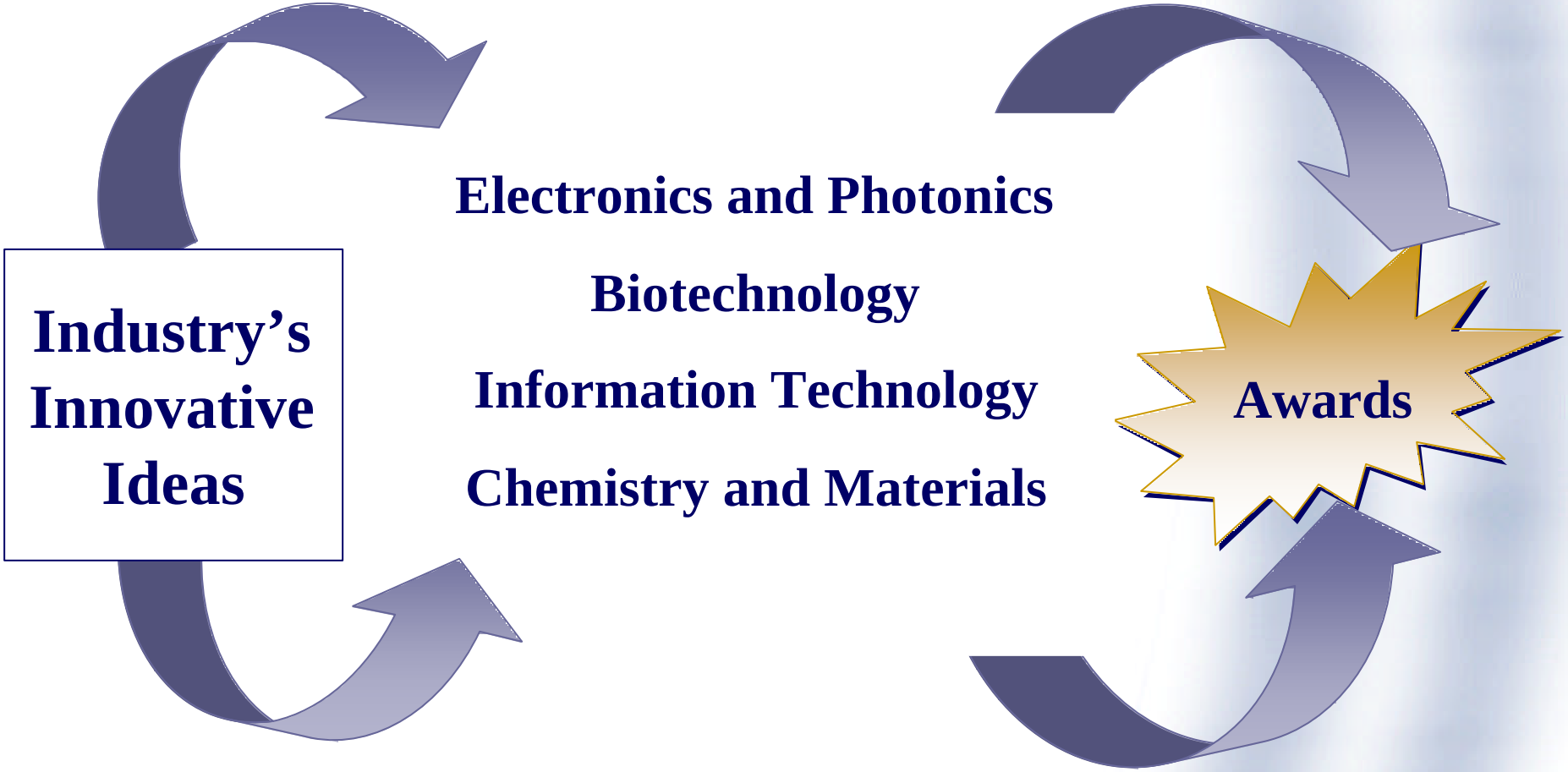
Business & Economic Peer Review

Project Selection Process



Competition Structure

2000Technology-Specific Project Selection Committees



Technology Offices Relationship with Industry

- **Development**
  - ✓ Support industry efforts to define high-risk, innovative projects and solicit related proposals for the ATP
  - ✓ Explore highest priority technical opportunities and barriers with American industry
  - ✓ Enable greater understanding of ATP criteria & objectives among industry through education and outreach
- **Selection**
  - ✓ Responsible for bringing together the qualified experts, which include ATP staff, to effectively manage the peer-review selection process that is based on the ATP criteria
- **Management**
  - ✓ Collaborate with awardees to ensure project success
  - ✓ Government's technical & business representatives
    - Monitor project technical and business progress against agreed milestones and expenditures

Our Offices

- Chemistry and Life Sciences
  - ✓ Linda Schilling (301) 975-2887
  - ✓ linda.schilling@nist.gov
- Electronics and Photonics
  - ✓ Philip Perconti (301) 975-4263
  - ✓ philip.perconti@nist.gov
- Information Technology and Applications
  - ✓ Harris Liebergot (301) 975-5196
  - ✓ harris.liebergot@nist.gov
- Economic Assessment
  - ✓ Rosalie Ruegg (301) 975-6135
  - ✓ rosalie.ruegg@nist.gov

What our Companies are Saying

"[Our] members regard an ATP award as the gold medal in the research Olympics."

"ATP provided us with the necessary financial bridge to move forward with our research……..it would not have been done otherwise."

"ATP means the opportunity to take a revolutionary idea and drive it against all odds to make it a reality."

"The ability to learn how to collaborate is ATP's #1 spillover benefit. More than 70% of the results from [the ATP project] ended up with our smaller suppliers."